IN THE CLAIMS

Please amend Claims 5, 6, 11, 12, and 15 as follows:

1.   (previously presented) A method of determining a first motion vector and a second motion vector for a first macroblock and a second macroblock, respectively, of a present image from a previous image, the method comprising:

selecting a predetermined pattern of pixels in the previous image;

computing a first-macroblock difference measure for each of a first plurality of pixel blocks in the previous image to form a plurality of first-macroblock difference measures for the first macroblock using the predetermined pattern of pixels;

selecting a first origin block from the first plurality of pixel blocks having a lowest first-macroblock difference measure;

computing the first motion vector using the first origin block and the first macroblock;

computing a second-macroblock difference measure for each of a second plurality of pixel blocks in the previous image to form a plurality of second-macroblock difference measures for the second macroblock using the predetermined pattern of pixels;

selecting a second origin block from the second plurality of pixel blocks having a lowest second-macroblock difference measure; and

computing the second motion vector using the second origin block and the second macroblock.

2.   (original) The method of Claim 1, wherein the predetermined pattern of pixels includes less than or equal to half of the pixels in the previous image.

3.   (original) The method of Claim 1, wherein the predetermined pattern of pixels includes a fourth of the pixels of the previous image.

4.   (original) The method of Claim 1, wherein the y-coordinate modulo four of each pixel in the predetermined pattern of pixels has a y-coordinate is equal to three or zero.

5.   (currently amended) The method of Claim 1, wherein computing a first-macroblock difference measure for each of a first plurality of pixel blocks in the previous image to form a plurality of first-macroblock difference measures for the first macroblock using the predetermined pattern of pixels further comprises:

> computing an absolute difference between each pixel in both the pixel block and the predetermined pattern with a corresponding pixel in the first macroblock to create a plurality of absolute differences; and
> summing the plurality of absolute differences to compute the difference measure.

6.   (currently amended) The method of Claim 1, wherein computing a first-macroblock difference measure for each of a first plurality of pixel blocks in the previous image to form a plurality of first-macroblock difference measures for the first macroblock using the predetermined pattern of pixels further comprises:

computing a squared difference between each pixel in both the pixel block and the predetermined pattern with a corresponding pixel in the first macroblock to create a plurality of squared differences; and

summing the plurality of squared differences to compute the difference measure.

7.　(previously presented) A method of determining a first motion vector and a second motion vector for a first macroblock and a second macroblock, respectively, of a present image from a previous image, the method comprising:

selecting a predetermined pattern of pixels in the previous image;

selecting a subpattern of pixels from the predetermined pattern of pixels;

computing a first first-macroblock difference measure for each of a first plurality of first-macroblock pixel blocks in the previous image to form a plurality of first first-macroblock difference measures using the subpattern of pixels;

selecting a first closest first-macroblock matching pixel block from the first plurality of first-macroblock pixel blocks having a lowest first first-macroblock difference measure;

computing a first accurate first-macroblock difference measure for the first closest first-macroblock matching pixel block using the predetermined pattern of pixels;

computing a first second-macroblock difference measure for each of a first plurality of second-macroblock pixel blocks in the previous image to form a plurality of first

second-macroblock difference measures using the subpattern
of pixels;

selecting a first closest second-macroblock matching
pixel block from the first plurality of second-macroblock
pixel blocks having a lowest first second-macroblock
difference measure; and

computing a first accurate second-macroblock
difference measure for the first closest second-macroblock
matching pixel block using the predetermined pattern of
pixels.

8. (original) The method of Claim 7, wherein the
predetermined pattern of pixels includes a fourth of the pixels
of the previous image.

9. (original) The method of Claim 7, wherein the y-
coordinate modulo four of each pixel in the predetermined
pattern of pixels has a y-coordinate is equal to three or zero.

10. (original) The method of Claim 7, wherein the
subpattern of pixels includes a fourth of the pixels of the
predetermined pattern.

11. (currently amended) The method of Claim 7, wherein
computing a first first-macroblock difference measure for each
of a first plurality of first-macroblock pixel blocks in the
previous image to form a plurality of first first-macroblock
difference measures using the subpattern of pixels comprises:

computing an absolute difference between each pixel in
both the first-macroblock pixel block and the subpattern
with a corresponding pixel in the first macroblock to
create a plurality of absolute differences; and

summing the plurality of absolute differences to compute the first difference measure.

12.   (currently amended) The method of Claim 7, wherein computing a first first-macroblock difference measure for each of a first plurality of first-macroblock pixel blocks in the previous image to form a plurality of first first-macroblock difference measures using the subpattern of pixels comprises:

computing an absolute difference between each pixel in both the first-macroblock pixel block and the predetermined pattern with a corresponding pixel in the first macroblock to create a plurality of absolute differences; and

summing the plurality of absolute differences to compute the first accurate difference measure.

13.   (previously presented) The method of Claim 7, further comprising

computing a second first-macroblock difference measure for each of a second plurality of first-macroblock pixel blocks in the previous image to form a plurality of second first-macroblock difference measures using the subpattern of pixels;

selecting a second closest first-macroblock matching pixel block from the second plurality of first-macroblock pixel blocks having a lowest first-macroblock difference measure; and

computing a second accurate first-macroblock difference measure for a second closest first-macroblock matching pixel block using the predetermined pattern of pixels.

14. (previously presented) The method of Claim 13, further comprising:

selecting the first closest first-macroblock matching pixel block as an origin block when the first accurate first-macroblock difference measure is less than or equal to the second accurate first-macroblock difference measure;

selecting the second closest first-macroblock matching pixel block as the origin block when the second accurate first-macroblock difference measure is less the first accurate first-macroblock difference measure; and

computing the motion vector using the origin block and the first macroblock.

15. (currently amended) A video encoder configured to determine a first motion vector and a second motion vector for a first macroblock and a second macroblock, respectively, of a present image from a previous image, the video encoder comprising:

a frame buffer configured to store the first macroblock, the second macroblock and the previous image;

a first first-phase processing unit coupled to the frame buffer and configured to compute a first plurality of first-macroblock difference measures and a first plurality of second-macroblock difference measures using a predetermined pattern of pixels; and

a comparator coupled to the first first-phase processing unit and configured to select a first origin block based on the first plurality of first-macroblock difference measures and a second origin block based on the plurality of second-macroblock difference measures.

16.   (original) The video encoder of Claim 15, further comprising a cache coupled between the frame buffer and the first first-phase processing unit.

17.   (previously presented) The video encoder of Claim 15, further comprising a second first-phase processing unit coupled to the frame buffer and configured to compute a second plurality of first-macroblock difference measures and a second plurality of second-macroblock difference measures using the predetermined pattern.

18.   (original) The video encoder of Claim 15, further comprising a first second-phase processing unit coupled to the first first-phase processing unit and the comparator, wherein the first second-phase comparator is configured to compute a difference measure using a subpattern of pixels.

19.   (previously presented) The video encoder of Claim 18, further comprising:

      second first-phase processing unit coupled to the frame buffer and configured to compute a second plurality of first-macroblock difference measures and a second plurality of second-macroblock difference measures using the predetermined pattern; and

      a second second-phase processing unit coupled to the second first-phase processing unit and the comparator, wherein the second second-phase comparator is configured to compute a difference measure using the subpattern of pixels.